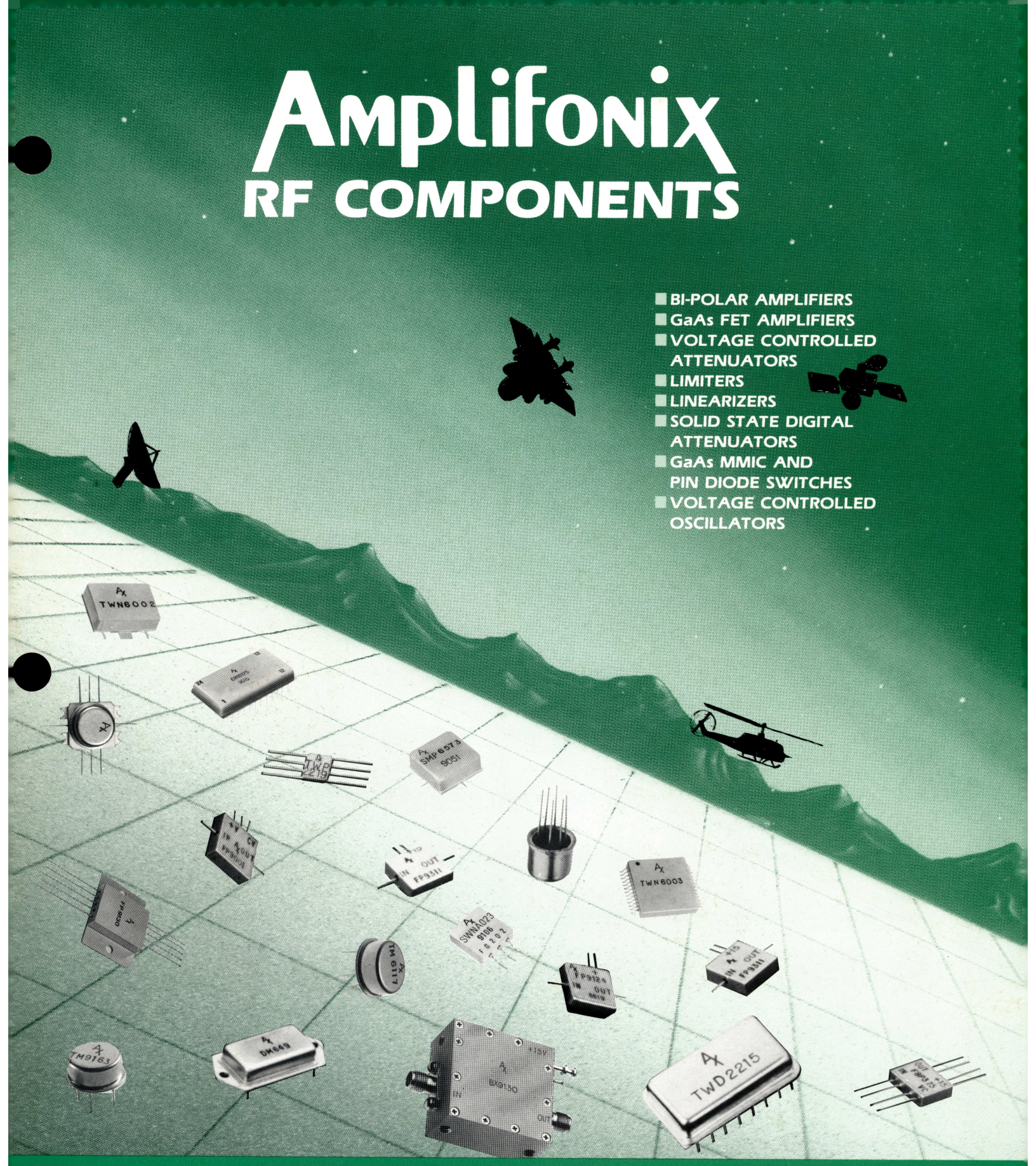
Amplifonix
RF COMPONENTS

- BI-POLAR AMPLIFIERS
- GaAs FET AMPLIFIERS
- VOLTAGE CONTROLLED ATTENUATORS
- LIMITERS
- LINEARIZERS
- SOLID STATE DIGITAL ATTENUATORS
- GaAs MMIC AND PIN DIODE SWITCHES
- VOLTAGE CONTROLLED OSCILLATORS



SHORT FORM CATALOG

Full Performance Amplifiers

Available in 4 Pin TO-8 (TM), 4 Pin TO-8B (TR), Flatpacks, Surface Mount Packages and Connectorized Housings

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out	Power Typ Vdc	Power Typ mA
*TM5125	5-100	20.5	19.5	2.0	3.0	+24.0	+22.5	+40	2.0:1	+15	90
TM7101	10-150	27.5	26.0	1.8	2.5	+16.5	+ 15.0	+30	2.0:1	+15	20
TM7103	10-150	26.5	25.0	2.3	2.75	+ 9.5	+ 8.0	+23	2.0:1	+ 5	15.5
TM5138	5-150	15.0	14.0	3.0	4.0	+23.0	+20.0	+40	2.0:1	+15	88
TM6117	10-200	8.2	7.0	1.3	2.0	+10.0	+ 9.0	+28	2.0:1	+15	12
TM7210	10-200	9.0	8.0	1.3	2.0	+14.0	+12.5	+31	2.0:1	+15	15
TM6118	10-200	10.0	9.0	1.5	2.0	+18.0	+16.5	+33	2.0:1	+15	18
*TM7205	10-200	19.5	18.5	1.6	2.2	+ 3.5	+ 3.0	+16	2.0:1	+ 5	22
TM7221	10-200	28.5	27.0	2.0	3.0	+18.5	+15.0	+33	2.0:1	+15	29
TM7211	10-200	8.5	7.5	2.0	3.0	+20.0	+18.0	+35	2.0:1	+15	30
*TM5124	20-200	20.5	19.5	2.5	3.5	+20.0	+18.0	+34	1.6:1	+15	53
*TM7250	5-200	33.0	29.0	2.5	4.0	– 1.5	– 4.0	+11	2.0:1	+ 5	13
TR7215	5-200	31.5	30.0	2.5	4.0	+13.0	+10.0	+26	2.0:1	+15	58
TM6121	20-200	10.0	9.0	2.5	4.0	+20.0	+18.0	+38	2.0:1	+15	60
TM7272	5-200	14.7	14.0	3.0	5.0	+14.0	+12.0	+29	2.0:1	+ 5	33
TM6134	5-200	14.3	13.5	4.0	6.0	+26.0	+23.0	+39	2.0:1	+15	90
*TM7208	5-250	22.0	20.0	1.4	2.0	+ 2.0	– 1.0	+12	2.0:1	+15	10
*TM7288	5-250	22.0	20.0	1.6	2.0	+ 8.0	+ 6.0	+20	2.0:1	+15	18
*TM7170	10-250	8.5	7.5	1.3	2.0	+ 8.5	+ 7.5	+24	2.0:1	+15	10
*TM7270	10-250	8.3	7.5	1.4	2.0	+14.0	+13.0	+32	2.0:1	+15	15
*TM7371	5-250	18.0	16.0	1.75	2.5	+ 2.0	+ 1.0	+14	2.0:1	+15	9
*TM7271	5-250	18.0	16.0	1.5	2.8	+ 0.5	– 1.0	+13	2.0:1	+15	9
*TM5570	20-250	8.2	7.0	1.8	3.0	+15.0	+13.0	+29	2.0:1	+ 5	25
*TM7381	20-250	24.5	23.0	2.2	3.0	+14.5	+12.5	+27	2.0:1	+15	18
TM6670	10-250	8.2	7.0	1.8	3.0	+19.0	+17.5	+38	2.0:1	+15	25
*TM6683	10-250	35.5	33.0	2.0	3.5	– 0.5	– 3.5	+10	2.0:1	+ 5	14
TM7281	20-250	25.5	23.0	2.3	3.3	+17.5	+15.5	+31	2.0:1	+15	30
TM7275	5-250	20.5	19.0	2.5	3.5	+ 9.5	+ 8.0	+22	2.0:1	+15	24
*TM6119	30-250	8.0	6.5	3.0	3.5	+23.0	+20.0	+36	2.0:1	+15	43
TM7370	20-250	8.0	6.5	2.5	3.5	+22.0	+21.0	+36	2.0:1	+15	43
TM7203	5-250	32.0	30.0	3.0	4.0	+ 8.0	+ 6.0	+19	2.0:1	+15	35
*TM7201	5-250	20.0	28.0	4.5	5.0	+ 8.0	+ 6.0	+19	2.0:1	+15	35
*TM7382	20-250	18.0	16.0	4.0	5.0	+18.0	+16.0	+31	2.0:1	+15	45
TM7282	20-250	23.5	21.0	4.0	5.0	+21.0	+18.0	+34	2.0:1	+15	45
TM7277	5-250	10.0	9.4	4.0	6.0	+24.0	+19.0	+32	2.0:1	+15	70
TM7202	5-250	27.0	26.0	5.0	6.5	+16.5	+15.0	+29	2.0:1	+15	88
TM7279A	5-250	14.0	12.5	4.5	7.0	+23.0	+21.0	+38	2.0:1	+15	88
*TM5150	10-300	20.0	19.0	2.5	3.5	+18.0	+17.0	+32	2.0:1	+15	47
TM5105	5-300	12.0	11.0	2.8	4.0	+ 7.0	+ 6.0	+21	2.0:1	+15	17
TM7287	10-300	15.5	14.5	2.8	4.0	+10.0	+ 9.0	+24	2.0:1	+ 5	14.5
TM7278	5-300	14.0	12.5	4.5	6.0	+21.5	+19.0	+34	2.0:1	+15	65
TM5103	10-300	11.5	10.0	5.0	6.5	+22.0	+20.0	+36	2.0:1	+15	85
TM7487	5-350	15.5	13.5	3.0	4.0	+ 8.0	+ 7.0	+21	2.0:1	+ 5	13
TM5104	5-350	13.0	12.5	2.8	4.5	+13.0	+11.0	+28	2.0:1	+15	42
*TM6181	10-400	8.5	7.5	1.7	2.5	+ 7.0	+ 6.5	+25	2.0:1	+15	11
TR6535	10-400	32.5	30.0	1.8	3.0	+22.0	+20.0	+37	2.0:1	+15	100
*TM6443	10-400	13.2	12.0	3.5	4.5	+ 6.5	+ 5.5	+19	2.0:1	+ 5	10
*TM6440	10-400	13.0	12.0	3.6	5.0	+ 9.0	+ 7.5	+23	2.0:1	+15	15
TM6416	5-400	14.5	13.5	4.0	5.0	+12.5	+ 9.5	+23	2.0:1	+15	35
*TM5541	20-400	14.5	13.0	3.5	5.0	+15.0	+13.0	+25	2.0:1	+ 5	33
*TM6487	10-400	15.5	14.0	3.2	5.0	+17.5	+15.0	+32	2.0:1	+15	33
*TM6554	5-400	27.5	25.5	5.0	6.0	+ 8.0	+ 6.0	+19	2.0:1	+15	39
TM6441	20-400	14.5	13.0	3.5	5.0	+16.0	+15.0	+31	2.0:1	+15	32
TM6587	10-400	12.8	12.0	4.0	6.0	+17.0	+16.0	+30	2.0:1	+15	33
TM6442	20-400	14.0	12.5	4.5	6.0	+22.0	+19.0	+34	2.0:1	+15	62
*TM6556	5-400	26.0	24.0	4.5	6.5	+14.0	+12.5	+28	2.0:1	+15	70

*New Product

Full Performance Amplifiers

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(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out	Power Typ Vdc	Power Typ mA
TR6476	10-450	29.0	28.0	2.7	3.5	+16.0	+11.0	+29	2.0:1	+ 8	65
TM6588	5-450	18.5	17.5	4.5	6.0	+21.0	+19.0	+35	2.0:1	+15	80
*TM6719	5-500	33.0	31.0	1.7	2.0	+ 9.5	+ 8.0	+19	2.0:1	+15	35
TM6143	5-500	15.8	15.0	1.6	2.5	+ 7.5	+ 5.0	+20	2.0:1	+15	14.5
TR7216	20-500	24.5	24.0	2.2	2.5	+19.5	+18.0	+33.5	2.0:1	+12	60
*TM6210	5-500	15.3	14.0	1.8	3.0	+ 7.5	+ 4.5	+18	2.0:1	+ 5	12
*TM5519	5-500	15.0	14.0	2.25	3.0	+14.5	+11.5	+29	2.0:1	+ 5	35
TM5119	5-500	15.5	14.0	2.3	3.0	+16.0	+14.0	+32	2.0:1	+15	30
TM6674	5-500	28.5	26.0	2.2	3.5	− 1.0	− 3.0	+ 9	2.0:1	+15	13.5
TM6573	5-500	32.0	29.0	2.5	3.5	+ 2.0	− 2.5	+14	2.0:1	+15	20
TM6501	5-500	16.5	15.5	2.5	3.5	+ 3.0	+ 1.0	+15	2.0:1	+15	10
TM6675	10-500	20.5	19.0	2.7	3.5	+ 4.5	+ 2.0	+15	2.0:1	+15	15
TM6512	5-500	21.0	19.0	2.5	3.5	+10.0	+ 8.0	+21	2.0:1	+15	23
TM6575	5-500	21.0	19.0	2.4	3.5	+ 9.5	+ 8.5	+21	2.0:1	+15	23
TM6517	5-500	22.7	21.0	2.4	3.5	+ 9.5	+ 8.5	+21	2.0:1	+15	22
*TM5544	10-500	12.5	11.0	2.5	3.5	+14.0	+12.0	+28	2.0:1	+ 5	35
TM6544	10-500	12.0	10.5	2.0	3.5	+15.0	+13.0	+32	2.0:1	+15	35
TM6583	10-500	30.0	28.0	2.3	4.0	0.0	− 4.0	+11	2.0:1	+ 5	13
*TM5101	5-500	13.0	12.0	2.75	4.0	+ 7.5	+ 6.0	+21	2.0:1	+15	20
TM6681	10-500	17.5	15.5	3.0	4.0	+ 9.5	+ 7.0	+23	2.0:1	+15	32
TM6524	5-500	30.5	28.5	3.0	4.0	+15.0	+14.0	+23	2.0:1	+15	65
TR6689	5-500	30.0	28.0	3.2	4.0	+21.5	+20.0	+34	2.0:1	+15	130
TR6676	10-500	40.5	37.5	3.0	4.3	+15.2	+13.1	+26	2.0:1	+15	77
TM6581	20-500	22.0	21.0	3.2	4.5	+16.0	+13.5	+28	2.0:1	+15	27
TM6674	5-500	28.5	26.0	2.2	3.5	− 1.0	− 3.0	+9	2.0:1	+15	13.5
*TM5133	10-500	10.0	9.0	3.3	4.5	+16.0	+14.5	+30	2.0:1	+15	57
*TM6582	30-500	23.0	21.0	3.5	4.5	+21.0	+17.0	+33	2.0:1	+15	47
TM6505	5-500	15.0	14.0	4.0	5.0	+10.0	+ 8.5	+23	2.0:1	+15	24
TM6533	5-500	16.5	15.0	3.5	5.0	+17.5	+16.5	+33	2.0:1	+15	50
TM6577	5-500	16.5	15.0	3.5	5.0	+17.5	+16.5	+33	2.0:1	+15	50
TR6589	5-500	26.5	25.0	3.8	5.0	+22.0	+20.0	+35	2.0:1	+15	130
TM6555	5-500	14.7	14.0	4.0	5.5	+11.5	+10.0	+25	2.0:1	+15	30
TM6572	5-500	14.7	13.5	4.0	5.5	+13.0	+11.0	+27	2.0:1	+ 5	30
TM6672	5-500	14.7	13.5	4.0	5.5	+13.0	+11.0	+27	2.0:1	+ 9	30
TM6147	5-500	17.0	16.0	3.5	5.5	+19.5	+17.5	+25	2.0:1	+15	50
TM6545	10-500	11.5	10.0	4.0	5.5	+19.0	+18.0	+36	2.0:1	+15	60
TM6574	5-500	30.0	27.0	4.8	6.0	+ 9.0	+ 7.0	+22	2.0:1	+15	37
TM6607	5-500	15.2	14.0	4.8	6.0	+15.0	+13.0	+27	2.0:1	+15	50
TR6776	1-520	30.0	26.0	4.1	6.0	+16.0	+13.5	+28	2.0:1	+15	65
TM6523	5-500	25.5	24.0	4.0	6.0	+16.0	+14.0	+30	2.0:1	+15	75
TM6576	5-500	28.0	26.0	5.0	6.0	+16.0	+14.0	+30	2.0:1	+15	64
*TM6509	5-500	14.5	13.0	4.6	6.0	+23.0	+20.0	+36	2.0:1	+15	88
TM6518	5-500	13.7	12.0	4.5	6.0	+25.0	+22.0	+35	2.0:1	+15	130
TM6557	10-500	15.0	13.5	4.5	6.5	+15.5	+14.0	+30	2.0:1	+15	44
TM6558	5-500	12.0	10.5	4.8	6.5	+19.0	+17.5	+36	2.0:1	+15	65
TM6131	5-500	10.3	9.0	4.5	6.5	+20.0	+18.0	+37	2.0:1	+15	62
TM6503	5-500	9.5	7.0	5.5	7.0	+15.0	+13.0	+33	2.0:1	+24	50
*TM6603	5-500	10.0	8.5	5.5	7.0	+15.5	+14.0	+30	2.0:1	+24	50
TM6559	5-500	11.5	10.0	5.5	7.0	+22.0	+20.0	+36	2.0:1	+15	88
TM6203	5-500	14.5	13.0	5.5	7.5	+25.0	+22.5	+36	2.0:1	+15	127
TM6507	10-500	15.5	14.0	6.0	8.0	+22.0	+20.0	+36	2.0:1	+15	110
*TM6605	10-600	15.7	13.5	3.0	4.5	+11.0	+ 7.0	+21	2.0:1	+15	24
TM9167	10-800	12.5	11.0	4.2	5.5	+15.5	+14.0	+29	2.0:1	+15	32
TM9118	10-800	14.7	13.5	4.4	5.5	+15.0	+14.5	+29	2.0:1	+15	45

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Full Performance Amplifiers

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TM9311	5-1000	16.0	15.0	2.3	3.0	+ 1.0	− 2.0	+13	2.0:1	+15	9
TM9363	5-1000	16.0	15.0	2.4	3.5	+ 7.0	+ 6.0	+21	2.0:1	+15	16
TM9111	5-1000	15.0	14.0	2.4	4.0	+ 1.0	− 2.0	+12	2.0:1	+15	9
TM9312	5-1000	16.5	15.0	2.5	4.0	+ 8.0	+ 4.0	+18	2.0:1	+15	18
TM9112	10-1000	16.0	14.5	3.0	4.0	+11.0	+ 9.0	+21	2.0:1	+15	22
TM9163	5-1000	16.0	15.0	2.5	4.5	+ 6.0	+ 2.0	+20	2.0:1	+15	14
*TM9143	10-1000	10.5	9.0	2.5	4.5	+10.0	+ 8.0	+27	2.0:1	+15	25
TM9366	10-1000	27.5	25.5	2.7	4.5	+16.0	+14.0	+26	2.0:1	+15	70
TM6145	10-1000	10.7	10.0	3.0	5.0	+19.0	+16.0	+33	2.0:1	+15	60
*TM9157	10-1000	10.5	9.0	4.5	5.5	+14.0	+13.0	+27	2.0:1	+15	44
TM9318	10-1000	14.7	13.5	3.8	5.5	+16.0	+14.5	+30	2.0:1	+15	47
*TR9169	10-1000	25.5	24.0	3.8	5.5	+21.0	+19.0	+33	2.0:1	+15	125
*TM9333	5-1000	11.5	10.0	4.8	6.0	+16.0	+14.0	+30	2.0:1	+15	48
TM9117	10-1000	12.0	10.0	4.0	6.0	+16.0	+15.0	+29	2.0:1	+15	46
TM9106	5-1000	12.0	10.5	4.8	6.5	+18.5	+16.0	+30	2.0:1	+15	70
TM9115	5-1000	15.2	13.0	4.1	7.0	+10.2	+ 6.5	+23	2.0:1	+15	24
TM9102	5-1000	14.5	13.5	5.0	7.0	+ 8.5	+ 7.0	+21	2.0:1	+15	23
TM9319	10-1000	11.5	10.0	5.5	7.5	+22.0	+20.0	+35	2.0:1	+15	90
TM9165	10-1000	10.5	9.0	4.0	8.0	+11.0	+ 8.0	+24	2.0:1	+15	30
TM9119	10-1000	9.0	7.0	6.5	9.0	+22.0	+19.0	+35	2.0:1	+15	100
TM6345	10-1100	12.3	11.5	2.6	3.7	+17.0	+15.0	+30	2.0:1	+15	45
*TM9316	10-1200	13.0	12.0	3.0	4.0	+ 6.0	+ 4.5	+19	2.0:1	+15	18
TM9164	10-1200	26.0	23.0	3.0	4.5	+ 8.0	+ 6.5	+19	2.0:1	+15	35
TM9166	10-1200	23.5	21.0	4.5	5.5	+15.0	+13.5	+27	2.0:1	+15	65
*TM5131	5-1300	18.0	17.0	5.0	7.0	+ 7.0	+ 5.0	+19	2.0:1	+15	40
TM6212	10-1300	10.0	8.5	6.0	8.0	+23.0	+19.5	+34	2.0:1	+15	92
TM9524	10-1500	22.0	20.0	4.3	5.0	+13.0	+10.0	+23	2.0:1	+15	56
*TM9502	5-1500	10.5	8.5	4.0	5.5	+ 9.0	+ 7.0	+24	2.0:1	+15	23
TM9123	5-1500	12.0	10.0	3.5	6.0	+ 4.5	+ 2.0	+19	2.0:1	+15	14
TM9114	10-1500	20.0	18.0	4.5	6.0	+ 6.5	+ 5.5	+20.5	2.0:1	+12	34
TM9124	10-1500	20.0	18.0	4.5	6.0	+ 7.0	+ 6.0	+20.5	2.0:1	+15	34
TM9522	5-1500	20.5	18.5	5.0	6.0	+14.0	+10.0	+23.5	2.0:1	+15	64
TM9126	10-1500	20.5	18.5	5.0	6.0	+15.0	+13.0	+28	2.0:1	+15	64
TM9128	10-1500	11.5	10.0	4.5	6.0	+15.0	+13.5	+29	2.0:1	+15	40
TM9122	10-1500	15.0	13.0	4.7	7.0	+ 5.0	+ 4.0	+21	2.0:1	+15	34
TM9121	10-1500	15.0	13.0	5.0	7.0	+ 7.0	+ 5.0	+19	2.0:1	+15	35
TM9125	10-1500	10.1	8.0	5.0	8.0	+ 8.0	+ 6.5	+21	2.0:1	+15	24
TM9329	10-1500	9.0	7.5	6.5	9.0	+22.0	+19.0	+35	2.0:1	+15	90
TM9127	10-1500	9.0	7.0	7.5	9.5	+15.5	+13.5	+22.5	2.0:1	+15	53
TM9129	10-1500	7.5	5.0	9.0	10.5	+21.0	+19.5	+34	2.0:1	+15	93
TM9331	10-2000	11.8	10.5	3.5	4.5	− 2.0	− 4.5	+9	2.0:1	+15	11
*TM9352	5-2000	10.0	8.5	4.0	5.5	+ 8.0	+ 5.0	+20	2.0:1	+15	18
*TM9324	5-2000	16.0	14.5	4.8	5.5	+ 6.5	+ 4.5	+19	2.0:1	+15	38
*TM9113	500-2000	11.0	8.5	4.5	6.0	+22.0	+18.0	+33	2.0:1	+15	120
TM9133	10-2000	10.0	8.0	4.2	6.0	+ 3.0	+ 2.0	+15	2.0:1	+15	16
TM9135	10-2000	10.2	8.5	5.0	6.5	+ 9.0	+ 7.5	+23	2.0:1	+15	25
*TM9322	10-2000	10.0	8.5	5.0	6.5	+ 9.0	+ 7.5	+23	2.0:1	+15	25
TM9136	100-2000	16.5	14.5	5.5	6.5	+12.0	+11.0	+23	2.0:1	+15	64
TM9134	100-2000	16.0	14.0	5.5	7.0	+ 7.0	+ 5.0	+18	2.0:1	+15	34
*TM9323	10-2000	8.5	7.5	5.5	7.5	+15.0	+14.0	+30	2.0:1	+15	50
TM9103	1000-2000	9.0	7.5	5.0	8.5	+11.0	+ 7.0	+24	2.0:1	+15	30
TM9137	10-2000	9.3	7.0	6.5	8.5	+15.5	+13.5	+28	2.0:1	+15	53
TM9138	10-2000	7.5	6.0	6.0	9.5	+19.0	+16.5	+33	2.0:1	+15	72
*TM9139	10-2000	7.5	6.0	7.5	10.0	+22.0	+20.0	+34	2.0:1	+15	90
TM9336	100-2300	16.0	14.0	6.0	7.5	+12.0	+11.0	+23	2.0:1	+15	63
*TM9302	1700-2300	10.5	8.5	5.0	6.5	+15.0	+14.0	+23	2.0:1	+15	18

*New Product

Low Cost Modules:

Available in 3 Pin TO-39 and Connectorized Housings

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out		Power Typ Vdc	Power Typ mA
CZ8040**	kHz-300	18.5	18.0	3.8	5.0	+11.0	+ 9.5	+18	3.0	2.5	+3.4	25
CZ8111**	kHz-400	15.0	13.0	2.8	4.0	+ 0.5	– 2.0	+14	2.5	2.5	+1.8	10
CZ8110**	kHz-400	14.0	13.0	4.0	4.5	– 2.0	– 4.0	+ 8	2.5	2.5	+3	10
CZ8120**	kHz-400	14.0	13.0	5.0	6.0	+ 9.0	+ 7.0	+18	2.5	2.5	+5	25
CZ8130**	kHz-400	14.0	13.0	6.0	7.0	+17.0	+16.0	+26	3.0	2.5	+5.75	60
CZ8210**	kHz-600	10.0	9.0	5.5	6.5	– 3.0	– 4.0	+ 8	2.5	2.5	+1.75	10
CZ8220**	kHz-600	10.0	9.0	5.5	6.5	+ 9.0	+ 7.0	+18	2.5	2.5	+3.5	25
CZ8230**	kHz-600	10.0	9.0	5.5	6.5	+16.0	+15.0	+22	3.0	2.5	+5	60
CZ8310**	kHz-1000	8.0	7.0	6.0	7.0	– 3.0	– 4.0	+ 8	3.0	3.0	+1.6	10
CZ8320**	kHz-1000	8.0	7.0	6.2	7.2	+ 8.0	+ 7.0	+18	3.0	3.0	+2.75	25
CZ8330**	kHz-1000	6.5	5.5	8.5	9.5	+14.0	+13.0	+22	3.0	3.0	+4.5	60

**Requires 3 external capacitors.

General Application Amplifiers

Available in 4 Pin TO-12, Flatpacks, Surface Mount Packages and Connectorized Housings

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out	Power Typ Vdc	Power Typ mA
CZ8206	5-200	31.8	30.0	3.2	3.5	+ 4.2	+ 3.0	+14	2.0:1	+12	30
CZ8251	5-200	26.5	25.0	3.6	4.0	+ 2.5	+ 1.0	+16	2.0:1	+ 5	30
CZ8201	5-200	32.0	30.0	3.3	4.0	+ 5.8	+ 3.0	+16	2.0:1	+15	30
CZ8202	5-200	29.0	27.0	4.2	5.0	+10.0	+ 9.0	+20	2.0:1	+15	60
CZ8207	5-200	18.0	17.0	4.0	5.5	+ 4.0	0.0	+13	2.0:1	+ 5	16.5
CZ8208	5-200	14.0	13.0	4.5	7.0	+12.0	+10.0	+23	2.0:1	+12	36
CZ8205	5-200	13.5	12.0	6.0	7.0	+21.0	+19.0	+25	2.0:1	+15	95
CZ8203	5-200	20.0	19.0	6.9	7.5	+ 9.5	+ 8.5	+20	2.0:1	+15	60
CZ8451	5-250	17.0	15.5	2.3	3.0	+ 2.5	0.0	+14	2.0:1	+ 5	12.5
*CZ8453	5-300	22.0	19.5	1.9	2.5	+ 5.0	+ 2.5	+16	2.0:1	+15	18
CZ8400	5-400	14.0	13.0	3.2	3.5	– 2.0	– 3.0	+ 8	2.5:1	+15	8
CZ8460**	kHz-400	14.0	13.0	3.2	3.5	– 2.0	– 3.0	+ 8	2.5:1	+15	8
CZ8401	5-400	14.0	13.0	4.2	4.8	– 2.0	– 4.0	+ 8	2.0:1	+15	10
CZ8461**	kHz-400	14.0	13.0	4.2	4.8	– 2.0	– 4.0	+ 8	2.0:1	+15	10
CZ8402	5-400	15.0	13.5	4.8	5.8	+ 7.0	+ 6.0	+20	2.0:1	+15	25
CZ8462**	kHz-400	15.0	13.5	4.8	5.8	+ 9.0	+ 7.0	+20	2.0:1	+15	25
CZ8405	5-400	13.5	13.0	6.0	7.0	+20.5	+19.0	+32	2.0:1	+15	90
CZ8403	5-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	+24	65
CZ8463**	kHz-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	+24	65
CZ8404	5-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	+15	65
CZ8464**	kHz-400	10.5	9.0	7.2	7.8	+15.0	+14.0	+26	2.0:1	+15	65
CZ8553	5-500	19.5	18.0	3.5	4.5	+12.0	+ 9.0	+24	2.0:1	+15	33

*New Product. **Requires 3 external capacitors.

GaAs Amplifiers

Available in 4 Pin TO-8, Flatpacks, Surface Mount Packages and Connectorized Housings

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out	Power Typ Vdc	Power Typ mA
*TM9702	500-1500	12.0	10.5	2.8	4.0	+19.8	+19.0	+32	2.0:1	+ 8	107
*TM9701	200-2000	12.0	11.0	3.0	4.0	+14.0	+13.0	+26	2.0:1	+ 5	48
*TM9700	200-2000	12.0	9.5	2.2	4.0	+17.5	+15.5	+29	2.2:1	+ 6	70
*TM9713	500-2000	11.0	8.5	4.5	6.0	+22.0	+18.0	+33	2.0:1	+ 15	120
*TM9725	500-2000	11.0	9.0	4.5	6.0	+26.5	+26.0	+37	2.0:1	+ 15	190

*New Product

General Application Amplifiers

Available in 4 Pin TO-8, Flatpacks, Surface Mount Packages and Connectorized Housings

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out	Power Typ Vdc	Power Typ mA
TZ9206	5-200	23.0	22.0	3.0	3.5	+ 7.7	+ 7.0	+17	2.0:1	+15	37
TZ9203	5-200	31.0	30.0	3.0	3.5	+ 7.7	+ 7.0	+17	2.0:1	+15	35
TZ9209	5-200	30.5	30.0	3.0	3.5	+ 7.7	+ 7.0	+21	2.0:1	+12	36
TZ9212	0.1-200	31.0	30.0	3.0	3.5	+ 7.7	+ 7.0	+17	2.0:1	+15	35
TZ9204	5-200	20.5	20.0	5.2	6.0	+ 5.8	+ 5.0	+16	2.0:1	+15	37
TZ9201	5-200	29.0	27.0	4.8	6.0	+ 7.7	+ 7.0	+17	2.0:1	+15	35
TZ9207	5-200	29.0	27.0	4.8	6.0	+ 7.7	+ 7.0	+17	2.0:1	+12	35
TZ9210	0.1-200	29.0	27.0	4.8	6.0	+ 7.7	+ 7.0	+17	2.0:1	+15	35
TZ9205	5-200	20.5	20.0	5.2	6.0	+14.4	+13.0	+27	2.0:1	+15	90
TZ9202	5-200	27.5	26.0	5.2	6.0	+15.5	+15.0	+26	2.0:1	+15	90
TZ9208	5-200	27.5	26.0	5.2	6.0	+15.5	+15.0	+26	2.0:1	+12	90
TZ9211	0.1-200	27.5	26.0	5.2	6.0	+15.5	+15.0	+26	2.0:1	+15	90
TZ9216	5-200	12.5	11.0	5.5	7.0	+15.5	+13.5	+30	2.0:1	+15	50
TZ9214	5-200	13.5	13.0	6.7	8.5	+21.0	+20.0	+34	2.0:1	+15	90
TZ9401	5-400	14.5	13.0	4.4	5.0	- 1.0	- 3.0	+ 8	2.0:1	+15	10
TZ9402	5-400	14.5	13.0	4.8	5.5	+ 7.0	+ 6.0	+18	2.0:1	+15	24
TZ9405	5-400	13.0	12.0	4.8	5.5	+20.0	+19.0	+30	2.0:1	+15	75
TZ9411	5-400	15.0	13.0	4.5	6.0	- 1.0	- 4.0	+12	2.0:1	+12	12
TZ9408	5-400	28.0	26.0	4.5	6.0	+10.4	+ 9.5	+24	2.0:1	+15	45
TZ9409	5-400	12.5	9.0	5.5	6.0	+15.0	+13.0	+30	2.0:1	+15	50
TZ9403	5-400	10.5	9.0	7.5	8.0	+15.0	+14.0	+26	2.0:1	+24	65
TZ9404	5-400	10.5	9.0	7.5	8.0	+15.0	+14.0	+26	2.0:1	+15	65
TZ9601	10-1000	15.5	15.0	6.0	6.5	+ 5.0	+ 4.0	+11	2.0:1	+15	35

Full Performance Amplifiers

Flatpack Package

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out	Power Typ Vdc	Power Typ mA
FP6146	5-500	21.0	20.5	5.0	5.5	+21	+20	+34	1.5:1	+15	130
FP9130	200-2000	23.5	22.0	5.0	6.5	+15	+13.5	+27	2.0:1	+15	90

Limiting Amplifiers

Available in 4 Pin TO-8, Flatpacks, Surface Mount Packages and Connectorized Housings

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Output Level Saturated dBm	Noise Figure	Power Outlet 1 dB Comp pt. Min dBm	VSWR MAX	Power Typ Vdc	Power Typ mA
TL9002	50-500	12.5	11.0	+15.0	9.0	+8.0	2.0:1	+15	54
TL9004	50-500	10.0	9.0	+13.5	9.0	+8.0	2.0:1	+12	50

Multi Stage Amplifiers

4 Pin Dip Package

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Gain (dB) Min	Noise Figure (dB) Typ	Noise Figure (dB) Max	Power Output (dBm) Typ	Power Output (dBm) Min	Third Order Intercept Point Typ (dBm)	VSWR MAX In/Out	Power Typ Vdc	Power Typ mA
DM4175	1-250	33.5	31.0	4.8	5.3	+10.5	+ 9.0	+25	2.0:1	+12	55
DM4178	1-250	21.0	20.0	6.0	7.0	+21.0	+20.0	+34	2.0:1	+15	120
DM4177	5-250	32.0	30.5	5.8	6.3	+ 9.0	+ 8.0	+21	2.0:1	+12	60
DM4179	5-250	21.0	20.0	6.0	7.0	+21.0	+20.0	+34	2.0:1	+15	120
DM4180	5-400	25.0	24.0	5.2	7.0	+22.0	+20.0	+30	2.0:1	+15	125
DM4150	5-500	25.0	24.0	2.3	2.7	+ 6.0	+ 5.0	+16	2.0:1	+12	40
DM4152	5-500	32.0	30.5	5.7	6.2	+ 9.0	+ 8.0	+21	2.0:1	+12	60

Voltage Controlled Oscillators

Available in 4 Pin TO-8, Flatpacks, Surface Mount Packages and Connectorized Housings

(Listed by increasing Frequency)

Model No.	Freq. Range (MHz)	Output Power (dBm) typ	min	Power Flatness (dB) typ	max	Tuning Voltage (V) min	max	Tuning Voltage Sensitivity (MHz/V) typ	min	Harmonics (dBc) typ	max	Spurious (dBc) typ	max	Phase Noise dBc/Hz *10 kHz/ 100 kHz typ	max	Power Vdc mA typ	
VTM 008	70- 100	+10.5	+7.0	±0.2	±1.0	1	20	4.0	2.25	−12	−8	<−80	−80	−95*	−85*	+10	9.5
VTM 009	100- 135	+10.0	+7.0	±0.2	±1.0	1	20	7	4	−12	−8	<−80	−80	−95*	−85*	+10	9.5
VTM 007	200- 300	+13.0	+10.0	±0.2	±0.5	0	20	12	4	−15	−10	<−80	−60	−120	−110	+10	15.0
VTM 027	1470-1530	+24.0	+23.0	±0.3	±0.5	3	16	15	10	−40	−30	<−80	−80	−115	−105	+15	120.0
VTM 025	1400-2000	+11.5	+10.0[2]	±0.75	±1.0	1	15	60	30	−13	−10	<−80	−80	−107	−100	+ 8	45.0
VTM 024	1400-2000	+14.5	+13.0	+0.75	±1.0	1	15	60	30	−13	−10	<−80	−80	−107	−100	+ 8	45.0
VTM 026	2200-2400	+13.5	+12.0	±0.3	±1.0	3	9	44[1]	30	−30	−20	<−80	−80	−107	−100	+ 8	35.0

[1]Linear Tuning [2]Improved Frequency Pulling

Connectorized Amplifier Packages

(Listed by increasing Frequency, Noise Figure, and Power)

Model No.	Freq. Range (MHz)	Gain (dB) Typ	Min	Noise Figure (dB) Typ	Max	Power Output (dBm) Typ	Min	Third Order Intercept Point (Typ dBm)	VSWR MAX In/Out	Power Typ Vdc	mA	Package Type
BX1525-4	10-500	23	22	2.0	2.7	+19	+17	+27	2.0:1	+15	189	H3
BX1501-4	10-500	29	27	2.0	3.0	+22	+20	+35	2.0:1	+15	140	H3
BX2502-4	10-500	62	60	2.4	3.5	+22	+20	+35	2.0:1	+15	240	H4
BX1522-4	10-500	47.5	45	2.6	3.5	+14	+13	+30	2.0:1	+15	110	H3
BX1502-4	10-500	50	48	2.8	3.5	+10	+ 9	+18	2.0:1	+15	60	H3
BX1535-4	10-700	24	20	2.2	3.0	+11.5	+10	+20	2.0:1	+15	62	H3
BX1503-4	10-1000	30	28	2.8	3.5	+10	+ 9	+22	2.0:1	+15	40	H3
BX1504-4	10-1000	25	23	4.5	5.5	+22	+20	+33	2.0:1	+15	133	H3
BX1505-4	10-1500	31	29	4.0	5.0	+ 7	+ 6	+20	2.0:1	+15	48	H3
BX2503-4	10-1500	41.5	40	4.2	5.5	+21	+19	+29	2.0:1	+15	187	H4
BX1506-4	10-1500	27	25	6.0	7.0	+21	+19	+29	2.0:1	+15	157	H3
BX1518-4	10-2000	20	18	3.5	5.0	+ 8	+ 7	+20	2.0:1	+15	34	H3
BX1507-4	10-2000	26	24	4.0	5.0	+ 7	+ 5	+16	2.0:1	+15	45	H3
BX1508-4	10-2000	15	14	7.5	9.0	+22	+20	+28	2.0:1	+15	143	H3

Screening To The Tables of MIL-STD-883 Is Available*

*Typical environmental screening procedure per Tables of 5004, 5005, 5008 or MIL-A-28875.

Internal Visual ..... Method 2017
Stabilization Bake ..... Method 1008, Cond. C
Temperature Cycle ..... Method 1010, Cond. C
Acceleration ..... Method 2001, Cond. A
Hermetic Seal ..... Method 1014, Cond. A and C
168 hr. Burn-in ..... Method 1015 @T_C +85°C

*Screening to the tables of MIL-STD-883 does not imply or suggest conformance to MIL-STD-1772.

Note: Specific tests and conditions may be modified per customer requirements.

PIN Diode Switches

(Listed by increasing Number of Throws and I.L.)

Model No.	Typ	Freq. Range (MHz)	I.L. (dB) Typ	I.L. (dB) Max	Isolation Typ	Isolation Min	Switch Speed (μs)	Term OHMS	Control	Package Type	Power Typ Vdc	Power Typ mA
TWM5000	SPST	10-1500	1.0	1.5	50	40	0.5	50	TTL	T-5	+ 5V	5
TWD5002	SPDT	30-1000	0.9	1.8	70	50	1	50	TTL	DP-11	+ 5V – 5V	18 12
TWD5001	SPDT	10-1000	1.0	2.0	45	25	4	50	TTL	DP-3	+15V	15
TWD5004	SP4T	30-1000	0.8	1.6	70	50	1	50	TTL	DP-5	+ 5V – 5V	35 25
TWD5003	SP4T	30-1000	1.0	2.0	65	40	3	50	TTL	DP-5	+ 5V	18
TWD5005	SP8T	30-500	1.2	1.8	55	40	1	50	TTL BCD	DP-5	+ 5V – 5V	20 5

Digital Attenuators

(Listed by increasing Number of Sections and Frequency)

Model No.	Freq. Range (MHz)	No. Sections	Range (dB)	I.L. (dB) Typ	I.L. (dB) Max	Switch Speed (μs)	Control	Package Type	Power Typ Vdc	Power Typ mA
TAD5006	10-150	4	2.0-30.0	2.5	3.3	10.0	TTL	DP-5	+ 5V	20
TAD5007	10-150	4	3.0-45.0	2.5	3.3	10.0	TTL	DP-5	+ 5V	25
TAD6006 (GaAs)	50-500	4	2.0-30.0	2.2	3.0	0.02	TTL	DP-11	+ 5V – 5V	3 3
TAD5008	50-250	5	2.0-62.0	4.2	5.5	2.5	TTL	DP-5	+ 5V	10
TAD2104 (GaAs)	20-2000	5	1.0-31.0	6.5	8.5	0.02	TTL	DP-5	+ 5V – 12V	5 8
TAD5009	50-250	7	0.1-12.7	3.0	4.2	2.5	TTL	DP-8	+ 5V	10
TAD5010	50-250	7	0.5-63.5	6.0	7.5	10.0	TTL	DP-8	+ 5V	25

Voltage Variable Attenuators and Linearizers

Available in 5 Pin TO-8, Flatpacks, Surface Mount Packages and Connectorized Housings

Model No.	Freq. Range MHz	Insertion Loss dB Typ	Insertion Loss dB Max	Attenuation dB Typ	Attenuation dB Min	VSWR MAX	Control Voltage Vcon	Control Voltage mA	Bias Voltage Voc	Bias Voltage mA Max	Power Typ Vdc	Power Typ mA
TG9001	5-2000	2.0	2.5	34	18	2.0:1	0-15	6.5	+15	10.0	+15	10.0
TG9030	100-2000	2.5	3.5	40	25	2.2:1	0-15	0-10	+15	10.0	+15	10.0

Model. No.	Freq. Range MHz	Typ Current Drain Min. Attenuation: Max Attenuation V–	V+	Vcon	V–	V+	Vcon	Linearity 3-20 dB Attenuation Typ	Max
TL9003	10-1000	5mA	31mA	15mA	5mA	21mA	25mA	< +1 dB	+2 dB

GaAs Switches

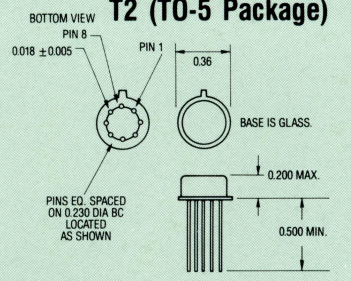
(Listed by increasing Number of Throws, Frequency and I.L.)

Model No.	Type	Freq. Range (MHz)	I.L. Typ	Isolation (dB) Typ	VSWR Typ	Terms OHMS	Driver	Package Type
TWM6001	SPST	10-1500	1.2	35	1.25:1	50	TTL	T-5
TWR6000	SPST	10-1500	2.5	80	1.25:1	OPEN	TTL	T-8
TWN6002	SPST	10-2000	1.2	35	1.25:1	50	TTL	SM-2
TWP2209	SPST	DC-3000	0.7	45	1.15:1	50	0/−5V	FP-7
TWK2213	SPST	DC-3000	0.7	55	1.15:1	50	0/−5V	T-2
TWP2214	SPST	DC-3000	0.7	55	1.15:1	50	0/−5V	FP-12
TWN2278	SPST	DC-3000	0.9	55	1.1:1	50	0/−5V	SM-2
TWD2215	SPST	5-3000	1.0	60	1.2:1	50	TTL	DP-3
TWD2216	SPST	5-3000	1.0	60	1.2:1	50	CMOS	DP-3
TWP2231	SPST	5-3000	1.0	55	1.2:1	50	TTL	FP-13
TWP2232	SPST	5-3000	1.0	55	1.2:1	50	CMOS	FP-13
TWK2224	SPDT	DC-2000	0.6	40	1.15:1	OPEN	TTL	T-2
TWP2225	SPDT	DC-2000	0.6	35	1.1:1	OPEN	TTL	FP-12
TWD2217	SPDT	5-2000	1.0	55	1.2:1	OPEN	TTL	DP-3
TWD2218	SPDT	5-2000	1.0	55	1.2:1	OPEN	CMOS	DP-3
TWP2233	SPDT	5-2000	1.0	50	1.2:1	50	TTL	FP-13
TWP2234	SPDT	5-2000	1.0	55	1.2:1	OPEN	TTL	FP-13
TWK2201	SPDT	DC-3000	0.5	50	1.15:1	OPEN	0/−5V	T-2
TWP2202	SPDT	DC-3000	0.5	50	1.15:1	OPEN	0/−5V	FP-12
TWP2219	SPDT	DC-3000	0.5	40	1.15:1	OPEN	0/−5V	FP-7
TWK2203	SPDT	DC-3000	0.8	50	1.15:1	50	0/−5V	T-2
TWP2204	SPDT	DC-3000	0.8	50	1.15:1	50	0/−5V	FP-12
TWD2207	SPDT	DC-3000	0.8	45	1.2:1	OPEN	TTL	DP-3
TWD2208	SPDT	DC-3000	0.8	45	1.2:1	OPEN	CMOS	DP-3
TWP2238	SPDT	5-3000	0.9	50	1.2:1	OPEN	CMOS	FP-13
TWD2205	SPDT	5-3000	1.2	55	1.2:1	50	TTL	DP-3
TWD2206	SPDT	5-3000	1.2	55	1.2:1	50	CMOS	DP-3
TWD2241	SP3T	5-2000	1.0	60	1.2:1	50	TTL	DP-10
TWD2242	SP3T	5-2000	1.0	60	1.2:1	OPEN	TTL	DP-10
TWD2244	SP3T	5-2000	1.0	60	1.2:1	50	CMOS	DP-10
TWD2245	SP3T	5-2000	1.0	60	1.2:1	OPEN	CMOS	DP-10
TWP2247	SP3T	5-2000	1.0	55	1.2:1	50	TTL	FP-14
TWP2248	SP3T	5-2000	1.0	55	1.2:1	OPEN	TTL	FP-14
TWP2251	SP3T	5-2000	1.0	55	1.2:1	50	CMOS	FP-14
TWP2252	SP3T	5-2000	1.0	55	1.2:1	OPEN	CMOS	FP-14
TWD2254	SP4T	5-2000	1.0	55	1.2:1	50	TTL	DP-10
TWD2255	SP4T	5-2000	1.0	55	1.2:1	OPEN	TTL	DP-10
TWD2257	SP4T	5-2000	1.0	55	1.2:1	50	CMOS	DP-10
TWD2258	SP4T	5-2000	1.0	55	1.2:1	OPEN	CMOS	DP-10
TWP2261	SP4T	5-2000	1.0	55	1.2:1	50	TTL	FP-14
TWP2262	SP4T	5-2000	1.0	55	1.2:1	OPEN	TTL	FP-14
TWP2264	SP4T	5-2000	1.0	55	1.2:1	50	CMOS	FP-14
TWP2265	SP4T	5-2000	1.0	55	1.2:1	OPEN	CMOS	FP-14
TWN2243	SP4T	DC-3000	0.7	40	1.2:1	OPEN	0/−5V	SG-5
TWN6003	SP6T	DC-1500	1.5	45	1.25:1	50	TTL	SG-2
TWP6004	SP7T	DC-2000	1.5	45	1.25:1	50	TTL	FP-9

Outline Drawings

All unmarked Pins are internally grounded.

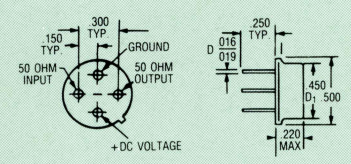
T2 (TO-5 Package)



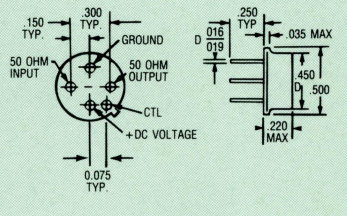
T-2

Model No.	RF1	RF2	A	B	COM	+V	-V	CTL
TWK2213	2	6	3	5	N/A	N/A	N/A	N/A
TWK2204	2	6	3	5	8	N/A	N/A	N/A
TWK2224	2	6	N/A	N/A	8	3	5	4

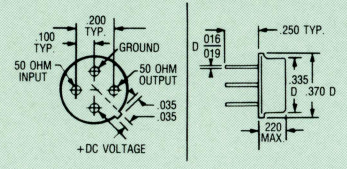
T4 (TO-8 Package)



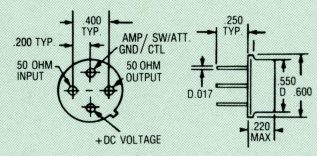
T5 (5 Pin TO-8 Package)



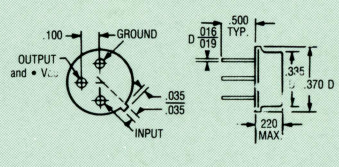
T7 (TO-12 Package)



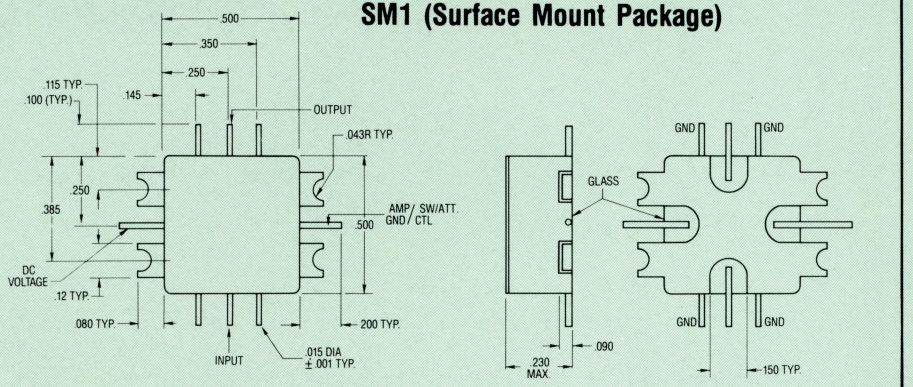
T8 (TO8-B Package)



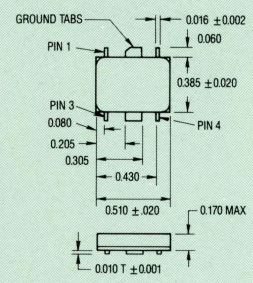
T10 (TO-39 Package)



SM1 (Surface Mount Package)



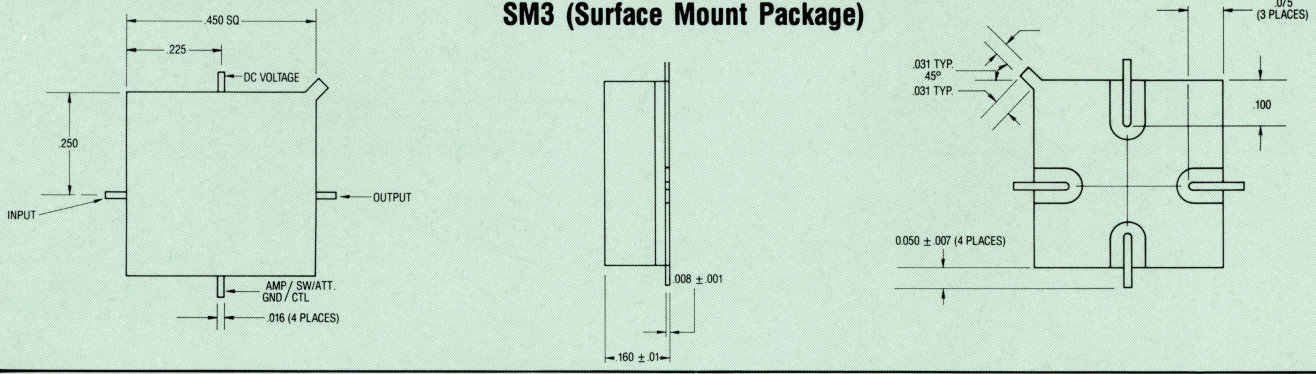
SM2 (Surface Mount Package)



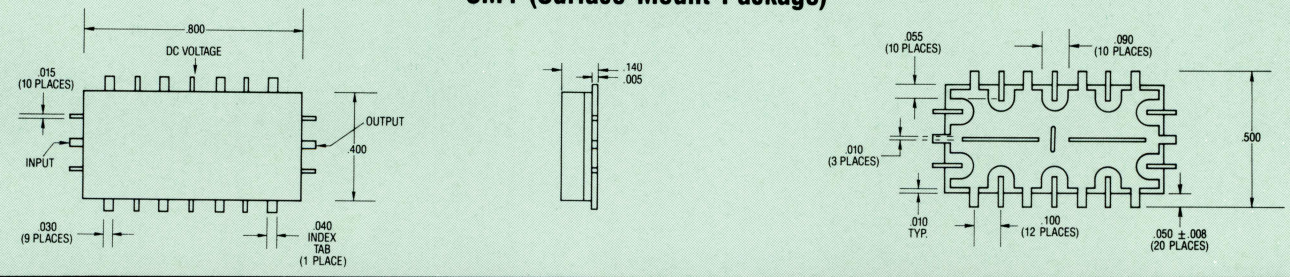
SM-2

Model No.	In	Out	DC	A	B	CTL
All Amps	3	1	2	N/A	N/A	N/A
TWN2278	3	1	N/A	4	2	N/A
TWN0002	1	3	2	N/A	N/A	4

SM3 (Surface Mount Package)



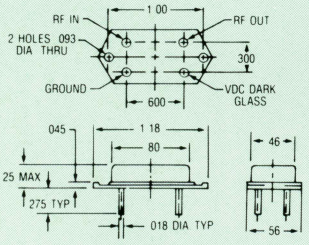
SM4 (Surface Mount Package)



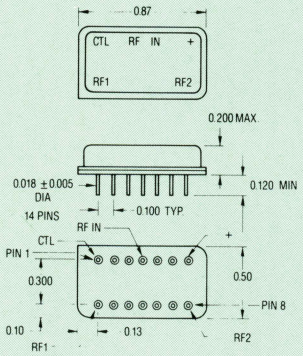
Outline Drawings

All unmarked Pins are internally grounded.

DP1 (Dip)



DP3 (Dip)

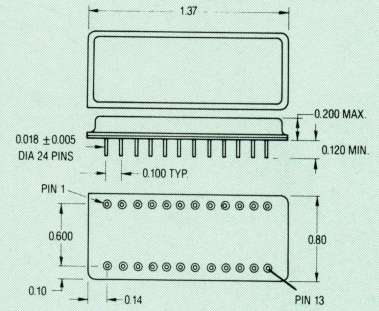


DP-3

Model No.	COM	RF1	RF2	+V	CTL
ALL	4	14	8	7	1
TWD5001 ONLY	4	14	8	3	5

RF 2 not used on SPST Switches
+ = +5 Vdc/+15V

DP5 (Dip)



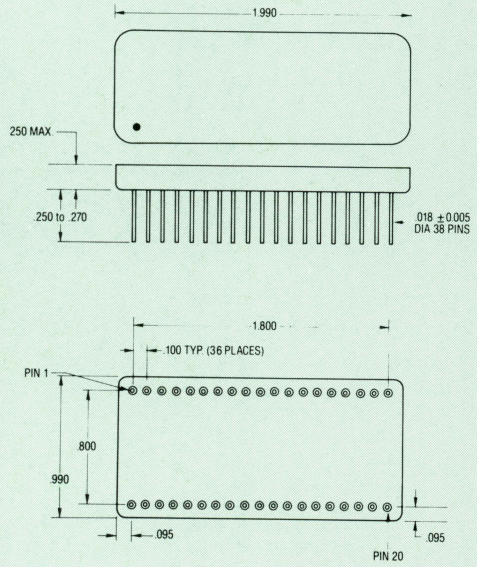
DP-5 Switches

Model No.	COM	RF1	RF2	RF3	R4	RF5	R6	RF7	RF8	CTL 1	CTL 2	CTL 3	CTL 4	+ Bias	− Bias
TAD5003	7	1	24	13	12	N/A	N/A	N/A	N/A	21	20	17	16	18	N/A
TAD5004	7	1	24	13	12	N/A	N/A	N/A	N/A	20	19	18	17	21	16
TAD5005	19	1	3	10	12	13	15	22	24	5	6	7	N/A	8	17

DP-5 Digital Attenuators

Model No.	RF In/Out	RF In/Out	0.5	1.0	2.0	3.0	4.0	6.0	8.0	12	16	24	32	+ Bias	− Bias
TAD2106	24	13	N/A	6	7	N/A	8	N/A	9	N/A	5	N/A	N/A	1	3
TAD5006	24	13	N/A	N/A	5	N/A	8	N/A	10	N/A	3	N/A	N/A	1	N/A
TAD5007	24	13	N/A	N/A	N/A	5	N/A	8	N/A	10	N/A	3	N/A	1	N/A
TAD5008	24	13	N/A	N/A	6	N/A	7	N/A	8	N/A	9	N/A	5	1	N/A

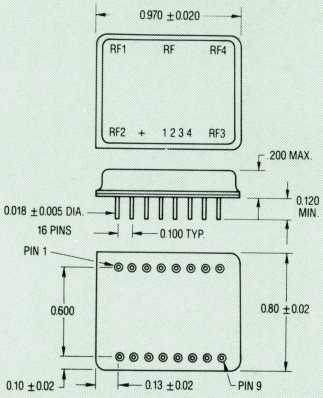
DP8 (Dip)



DP-8

Model No.	RF In/Out	RF In/Out	.1	.2	.4	.5	.8	1.0	1.6	2.0	3.2	4.0	6.4	8.0	16	32	+ Bias
TAD5009	38	20	13	9	11	N/A	15	N/A	7	N/A	5	N/A	17	N/A	N/A	N/A	N/A
TAD5010	38	20	N/A	N/A	N/A	7	N/A	9	N/A	11	N/A	13	N/A	15	17	5	1

DP10 (Dip)

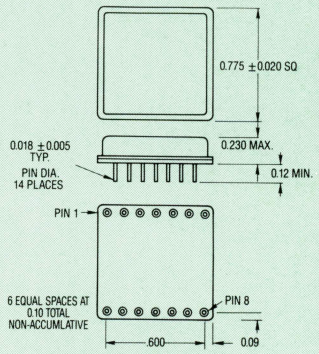


DP-10

COM	RF1	RF2	RF3	RF4	V+	CTC 1	CTC 2	CTC 3	CTC 4
5	1	8	9	16	15	13	12	11	10

RF 4 not connected on SP3T Switches
+ = +5 Vdc

DP11 (Dip)



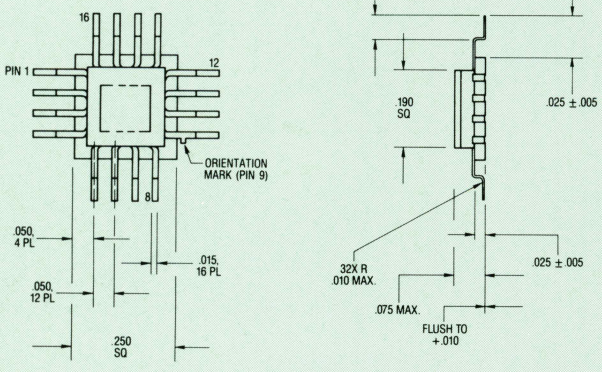
DP-11 Switch

Model No.	RF COM	RF 1	RF 2	− BIAS	+ BIAS	CTL
TWD5002	11	1	7	5	3	4

DP-11 Digital Attenuator

Model No.	RF IN	RF OUT	2.0	4.0	8.0	10.0	+ Bias	− Bias
TAD6006	1	14	3	11	12	4	10	5

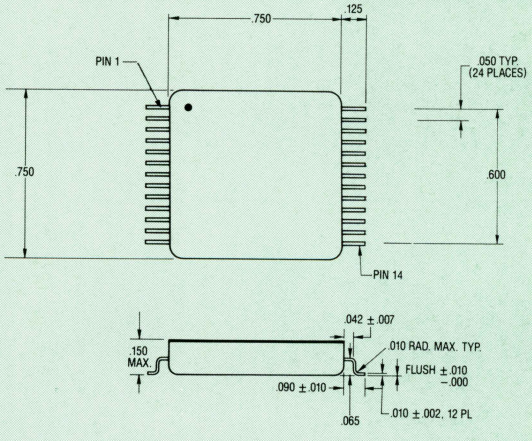
SG5 (Gull Wing Surface Mount Package)



SG-5

Model No.	RF1	RF2	RF3	RF4	COM	A1	B1	A2	B2	A3	B3	A4	B4
TWN2243	1	6	8	13	15	2	3	5	4	9	10	11	12

SG2 (Gull Wing Surface Mount Package)



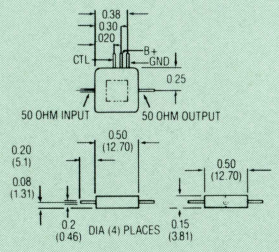
SG-2

Model No.	COM	RF1	RF2	RF3	RF4	RF5	RF6	−V	CTL1	CTL2	CTL3
TWN6003	7	15	17	19	21	23	25	13	3	4	5

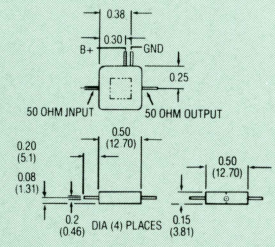
Outline Drawings

All unmarked Pins are internally grounded.

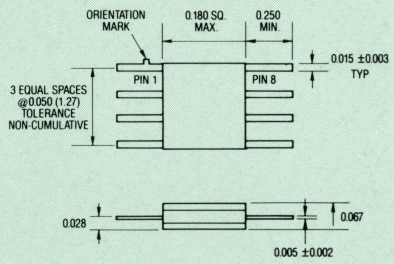
FP2 (Flatpack)



FP4 (Flatpack)



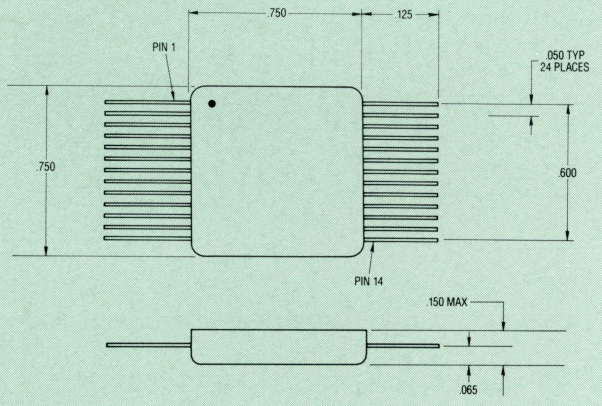
FP7 (Flatpack)



FP-7
PIN CONFIGURATION

Model No.	RF COM	RF1	RF2	A	B
SPST	N/A	8	5	2	3
SPDT	1	3	6	4	5

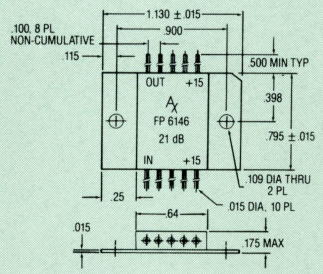
FP9 (Flatpack)



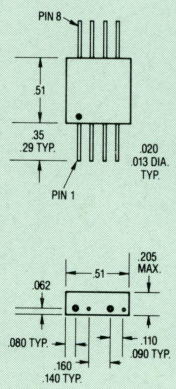
FP-9

Model No.	COM	RF1	RF2	RF3	RF4	RF5	RF6	RF7	-V	CTL 1	CTL 2	CTL 3
TWP6004	7	14	16	18	20	22	24	26	13	3	4	5

FP10 (Flatpack)



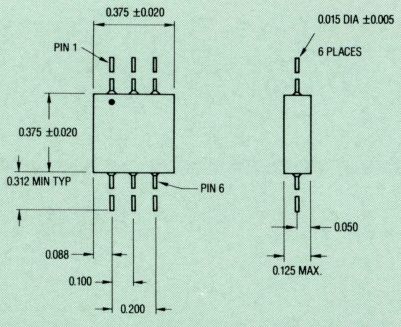
FP11 (Flatpack)



FP-11

	Out	$V_{T_{cm}}$	V+
VCOs	7	3	1

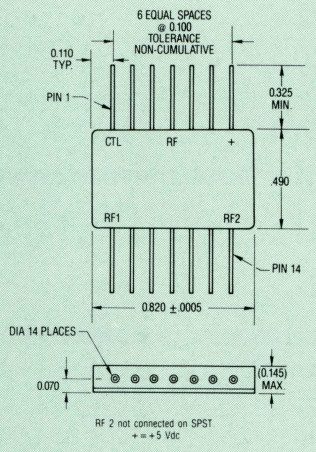
FP12 (Flatpack)



FP-12

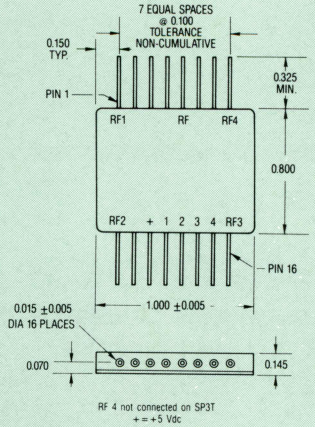
Model No.	RF1	RF2	COM	A	B	+5	-5	CTL
TWP2214	2	4	N/A	1	3	N/A	N/A	N/A
TWP2202	4	6	2	1	3	N/A	N/A	N/A
TWP2225	4	6	2	N/A	N/A	1	3	4

FP13 (Flatpack)



RF 2 not connected on SPST
+ = +5 Vdc

FP14 (Flatpack)

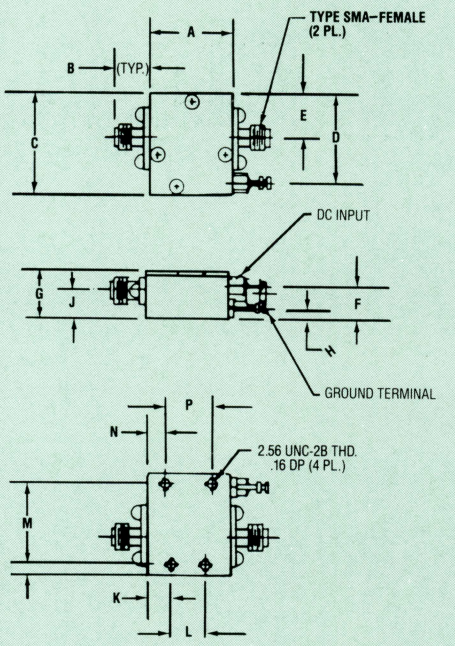


RF 4 not connected on SP3T
+ = +5 Vdc

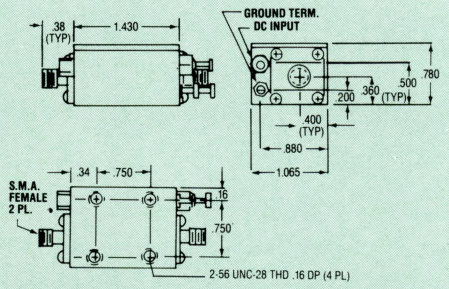
Outline Drawings *All unmarked Pins are internally grounded.*

	H1	H2
	TO-8	TO-8B
A	.82	.92
B	.38	.375
C	1.00	1.100
D	.895	1.000
E	.460	.510
F	.335	.332
G	.50	.525
H	.125	.125
J	.310	.332
K	.250	.260
L	.320	.385
M	.810	.910
N	.180	.230
P	.460	.510
R	.095	.095

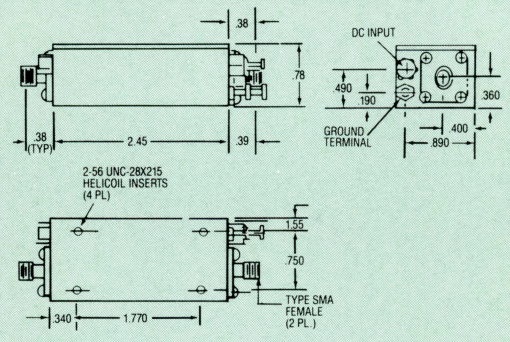
H1 or H2 (Single Stage)



H3 (Two Stages)



H4 (Three and Four Stages)



Switch Cross Reference List

ANZAC MODEL #	AMPLIFONIX MODEL #	ANZAC MODEL #	AMPLIFONIX MODEL #	ANZAC MODEL #	AMPLIFONIX MODEL #	ANZAC MODEL #	AMPLIFONIX MODEL #
TWK2203	SW203	TWD2217	SW217	TWD2241	SW241	TWD2255	SW255
TWP2204	SW204	TWD2218	SW218	TWD2242	SW242	TWD2257	SW257
TWD2205	SW205	TWP2219	SW219	TWD2244	SW244	TWD2258	SW258
TWD2206	SW206	TWK2224	SW224	TWD2245	SW245	TWP2261	SW261
TWP2209	SW209	TWP2231	SW231	TWP2247	SW247	TWP2262	SW262
TWK2213	SW213	TWP2232	SW232	TWP2248	SW248	TWP2264	SW264
TWP2214	SW214	TWP2233	SW233	TWP2251	SW251	TWP2265	SW265
TWD2215	SW215	TWP2234	SW234	TWP2252	SW252	TWN2278	SW278
TWD2216	SW216	TWP2238	SW238	TWD2254	SW254		

Voltage Controlled Oscillators Cross Reference List

VARIL MODEL #	AMPLIFONIX MODEL #	VARIL MODEL #	AMPLIFONIX MODEL #	VARIL MODEL #	AMPLIFONIX MODEL #	VARIL MODEL #	AMPLIFONIX MODEL #
VCO104	VTM1104	VCO105	VTM1105	VCO109	VTM1109	VCO111	VTM1111
		VCO108	VTM1108	VCO110	VTM1110	VCO112	VTM1112

Amplifier Cross Reference List

ANZAC[1] MODEL #	AMPLIFONIX MODEL #
AM117	TM6117
AM119	TM6119
AM131	TM6131
AM134	TM6134
AM143	TM6143
AM145	TM6145
AM146	FP6146
AM147	TM6147
AM153	TM6153
AM171	TM6171
AM181	TM6181
AM210	TM6210

AVANTEK MODEL #	AMPLIFONIX MODEL #
GPD110	CZ8110
GPD120	CZ8120
GPD130	CZ8130
GPD201	CZ8201
GPD202	CZ8202
GPD251	CZ8251
GPD310	CZ8310
GPD320	CZ8320
GPD330	CZ8330
GPD401	CZ8401
GPD402	CZ8402
GPD403	CZ8403
GPD404	CZ8404
GPD405	CZ8405
GPD461	CZ8461
GPD462	CZ8462
GPD463	CZ8463
GPD464	CZ8464
UTC5-115	BX2530-4
UTC5-123	BX1556-4
UTC5-133	BX1557-4
UTC5-135	BX2529-4
UTC5-142	BX2532-4
UTC5-150	BX1561-4
UTC5-152	BX1560-4
UTC11-102	BX1559-4
UTC11-108	BX1558-4
UTC12-104	BX2531-4
UTF025	TG9001
UTF030	TG9130
UTO101	TM7101
UTO103	TM7103
UTO210	TM7210
UTO211	TM2211
UTO221	TM7221
UTO250	TM7250
UTO416	TM6416
UTO440	TM6440
UTO441	TM6441
UTO442	TM6442
UTO443	TM6443
UTO502	TM6505
UTO503	TM6603

AVANTEK MODEL #	AMPLIFONIX MODEL #
UTO505	TM6705
UTO507	TM6507
UTO509	TM6509
UTO510	TM6501
UTO511	TM6501
UTO512	TM6512
UTO514	TM6514
UTO515	TM6515
UTO516	TM6516
UTO517	TM6517
UTO518	TM6518
UTO520	TM6520
UTO521	TM6574
UTO523	TM6623
UTO524	TM6524
UTO533	TM6533
UTO543	TM6543
UTO544	TM6544
UTO545	TM6545
UTO1001	TM9101
UTO1002	TM9102
UTO1006	TM9106
UTO1011	TM9111
UTO1012	TM9312
UTO1033	TM9333
UTO1043	TM9143
UTO1502	TM9502
UTO1522	TM9522
UTO1524	TM9524
UTO2013	TM9713
UTO2022	TM9322
UTO2023	TM9323
UTO2024	TM9324
UTO2025	TM9725

QBIT MODEL #	AMPLIFONIX[2] MODEL #
QBH101	TM5101
QBH103	TM5103
QBH104	TM5104
QBH105	TM5105
QBH107	TM5107
QBH110	TM5110
QBH119	TM5119
QBH120	TM5120
QBH124	TM5124
QBH125	TM5125
QBH126	TM5126
QBH131	TM5131
QBH133	TM5133
QBH138	TM5138
QBH150	TM5150
QBH387B	TM5109

MOTOROLA MODEL #	AMPLIFONIX MODEL #
MWA110	CZ8110
MWA120	CZ8120
MWA130	CZ8130
MWA210	CZ8210
MWA220	CZ8220
MWA230	CZ8230
MWA310	CZ8310
MWA320	CZ8320
MWA330	CZ8330

WJ MODEL #	AMPLIFONIX MODEL #
A-1	TM6501
A-3	TM6503
A-5	TM6505
A-5-5	TM6605
A-7	TM6607
A-9	TM6509
A-11	TM9111
A-11-1	TM9111
A-11-2	TM9311
A-12	TM9312
A-13	TM9113
A-15	TM9115
A-16-2	TM9316
A-17	TM9117
A-18	TM9118
A-18-1	TM9318
A-19	TM9119
A-19-1	TM9319
A-21	TM9121
A-29-1	TM9329
A-23	TM9123
A-24	TM9124
A-25	TM9125
A-26	TM9126
A-27	TM9127
A-28	TM9128
A-29	TM9129
A-31-1	TM9331
A-33	TM9133
A-34	TM9134
A-35	TM9135
A-36	TM9136
A-36-1	TM9336
A-37	TM9137
A-38	TM9138
A-39	TM9139
A-54	TM6554
A-55	TM6555
A-56	TM6556
A-57	TM6557
A-58	TM6558
A-59	TM6559
A-59-1	TM6659
A-63	TM9163
A-63-1	TM9363
A-64	TM9164
A-65	TM9165
A-66	TM9166
A-66-1	TM9366
A-66-3	TM9566

WJ MODEL #	AMPLIFONIX MODEL #
A-67	TM9167
A-67-1	TM6667
A-70	TM7170
A-70-1	TM7270
A-70-2	TM6670
A-70-3	TM7370
A-71	TM7271
A-72	TM6572
A-73	TM6573
A-74	TM6574
A-74-1	TM7274
A-74-2	TM6674
A-75	TM6575
A-75-2	TM7275
A-75-3	TM6675
A-76	TM6576
A-77	TM6577
A-77-1	TM6677
A-78	TM7278
A-79	TM7279
A-81	TM7281
A-81-1	TM7381
A-81-2	TM6581
A-81-3	TM6681
A-82	TM7282
A-82-1	TM7382
A-83	TM6583
A-83-1	TM6683
A-86	TM7286
A-87	TM6587
A-87-1	TM6487
A-87-2	TM7287
A-87-4	TM6687
CA-65	BX9165
CA-66-1	BX9366
RA66	TR9666
RA69	TR9169
RA76	TR6676
A-88	TM6588
RA89	TR6589
RA89-1	TR6689
DA-1	TM4150
EA-1	CZ8401
EA-2	CZ8402
EA-4	CZ8461
EA-5	CZ8402
G-1	TG9001
G-30	TG9030
L1	TL9010
L2	TL9011
LA-7	TL9002
AL-7	TL9012
LG-1	TL9003
LG-30	TL9009
PA-3	TM6203
PA-12	TM6212
PA-188	TM7288
PA-219	TM6719

[1]Licensed under U.S. patent number 3,624,536. [2]Less reverse isolation.

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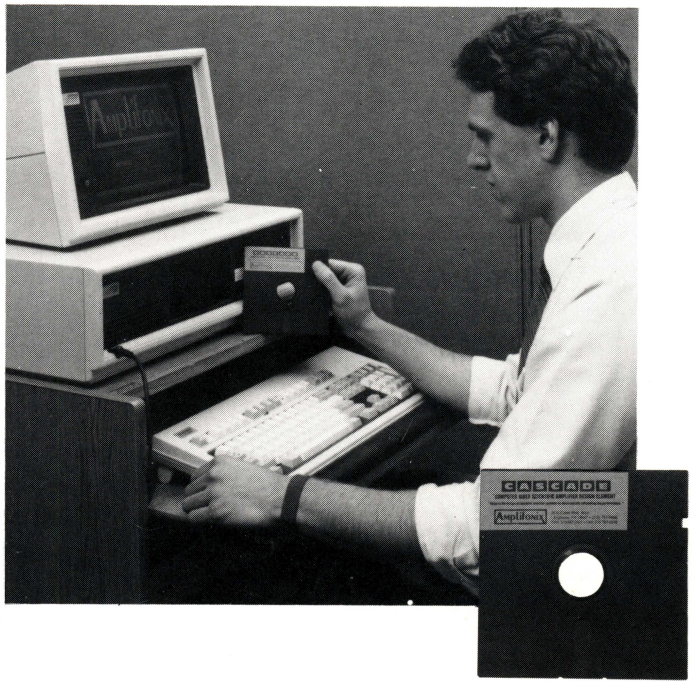

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